



HDR, Inc.
9781 S Meridian Blvd, Suite 400
Englewood, CO 80112

W-10A
PAGE 1 OF 1

CLIENT Xcel Energy PROJECT NAME Comanche Station
PROJECT NUMBER 10217175 PROJECT LOCATION Pueblo, CO
DATE STARTED 12/08/20 09:25 COMPLETED 12/08/20 11:00 WELL LOCATION 562453.84 N 2266883.73 E
DRILLING CONTRACTOR Dakota Drilling GROUND ELEVATION 4834 ft HOLE DIAMETER 8
DRILLING METHOD HSA/NX/AR GROUND WATER LEVELS:
LOGGED BY E. Munoz CHECKED BY _____ AFTER DRILLING ---
NOTES New, XYZ estimated pending survey

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							Casing Type: 2-in PVC
				SM	1.0	SILTY SAND (SM), very dark grayish brown (10YR 3/2), loose, dry, fine grained, some coarse sand (Fill)	
				ML		SILT (ML), yellowish brown (10YR 5/4), soft, low plasticity, dry, with fine sand (Colluvium) (W-10-2.5)	Bentonite Chips
5				SC	5.0	CLAYEY SAND (SC), light yellowish brown (10YR 6/4), medium dense, dry, fine grained, grades into silty clay with fine sand, mottled with evaporites (Colluvium) (W-10-5)	
				CH	7.5	FAT CLAY (CH), light yellowish brown (10YR 6/4), stiff to very stiff, medium plasticity, dry, with very dark gray (10YR 3/1) shale fragments, recrystallized evaporites on high-angle fractures, rig grinding/auger sticking in clay (Colluvium) (W-10-7.5, W-10-10, W-10-12.5)	
10							10/20 Silica Sand 0.010-in Slot
				CL	15.5	LEAN CLAY (CL), light yellowish brown (10YR 6/4), stiff, low plasticity, dry, with fine sand and very dark gray (10YR 3/1) shale fragments, recrystallized evaporites on high-angle fractures (Colluvium) (W-10-15)	
15					17.5		

Bottom of borehole at 18.0 feet.



HDR, Inc.
9781 S Meridian Blvd, Suite 400
Englewood, CO 80112

W-10B
PAGE 1 OF 1

CLIENT Xcel Energy PROJECT NAME Comanche Station
PROJECT NUMBER 10217175 PROJECT LOCATION Pueblo, CO
DATE STARTED 12/07/20 10:05 COMPLETED 12/08/20 09:25 WELL LOCATION 562456.84 N 2266963.73 E
DRILLING CONTRACTOR Dakota Drilling GROUND ELEVATION 4837 ft HOLE DIAMETER 8
DRILLING METHOD HSA/NX/AR GROUND WATER LEVELS:
LOGGED BY E. Munoz CHECKED BY _____
AFTER DRILLING 25.47 ft / Elev 4811.53 ft
NOTES New, XYZ estimated pending survey

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							Casing Type: 2-in PVC
	MC	83	4-5	SM		1.0 SILTY SAND (SM), very dark grayish brown (10YR 3/2), loose, dry, fine grained, some coarse sand (Fill) SILT (ML), yellowish brown (10YR 5/4), soft, low plasticity, dry, with fine sand (Colluvium) (W-10-2.5)	
5	MC	83	11-15	ML		5.0 CLAYEY SAND (SC), light yellowish brown (10YR 6/4), medium dense, dry, fine grained, grades into silty clay with fine sand, mottled with evaporites (Colluvium) (W-10-5)	
	MC	91	22-28/5"	SC		7.5 FAT CLAY (CH), light yellowish brown (10YR 6/4), stiff to very stiff, medium plasticity, dry, with very dark gray (10YR 3/1) shale fragments, recrystallized evaporites on high-angle fractures, rig grinding/auger sticking in clay (Colluvium) (W-10-7.5, W-10-10, W-10-12.5)	
10	MC	89	21-29/3"	CH			
	MC	100	30-20/3"	CH			
15	MC	91	23-27/5"	CL		15.5 LEAN CLAY (CL), light yellowish brown (10YR 6/4), stiff, low plasticity, dry, with fine sand and very dark gray (10YR 3/1) shale fragments, recrystallized evaporites on high-angle fractures (Colluvium) (W-10-15)	
	MC	100	38-12/1"	CL		17.5 SHALE, highly weathered, very dark gray (10YR 3/1), weak, friable, clayey, fractured with evaporites and iron staining (Weathered Shale) (W-10-17.5)	
20	MC	100	50			20.0 SHALE, moderately weathered, very dark gray (10YR 3/1), medium strong, dry, iron stained with trace evaporites (Weathered Shale) (W-10-20)	
	NX	100				20.5 SHALE, moderately weathered, dark grayish brown (10YR 4/2), medium strong, dry, fractured with iron staining and evaporite depositis (Weathered Shale) (W-10-20-25 [SPLP])	
25	NX	75				25.0 SHALE, moderately weathered to highly weathered, very dark gray (10YR 3/1), weak, clayey, moist to wet, highly fractured, iron stained (Weathered Shale)	
30	NX	100				29.0 SHALE, slightly weathered, dark gray (Gley 1 4/N), weak, clayey, moist, unfractured (Weathered Shale)	
	NX	100				31.0 SHALE, unweathered, dark gray (Gley 1 4/N), strong, unfractured (Unweathered Shale) (W-10-32-34 [SPLP])	
						34.0	

Bottom of borehole at 34.0 feet.